THE

HORTICULTURAL REGISTER

AND

GARDENER'S MAGAZINE.

JULY 1, 1836.

ART. I. — *Additional Donations of New and Valuable Varieties of Fruits received from Dr Van Mons.* Communicated by Mr WILLIAM KENRICK.

In addition to the liberal donations of new and excellent varieties of fruits received of Dr Van Mons in the former seasons, we have, since the commencement of the present year, been favored with other and renewed manifestations of his bounty and goodness, with renewed donations of whatever was most new, valuable, and approved from the same illustrious source.

Most of those new kinds which we had received of M. Van Mons in the former years, were from various causes which were beyond our control, totally lost; and it was not till the spring of 1835 that a single package, a renewal of many before sent, fortunately reached us in good condition, the principal part of which we were enabled to save. The list of the *named kinds then* received, I published last July and August in the numbers of the New England Farmer, and Hort. Register. Of all, about 75 *named kinds* were then saved; those however, in that list with an asterisk prefixed, were totally lost in that year. But another list of 60 kinds which were designated by *numbers only*, were in that year also saved; these I omitted to publish at that time. Yet as many of these varieties must be of equally superior quality to the *named kinds*, I have therefore inserted them here.

All will be found accurately described, as M. Van Mons has assured us, in the second volume of the "*Pomonomie Belge*," a work written by him, which was still in press at the latest date, at Antwerp, and

which I have the promise of soon receiving. Some of them have indeed been lately described by M. Poiteau, in a volume entitled *Theorie Van Mons*, which he has very recently had the goodness to send me from Paris, the same which he had also sent to Gen. Dearborn, both brought thence by Mr De Wael, who sojourned for a time in that capital, while on his way from his native country and from Van Mons, to abide in ours for a season. Some of these descriptions I propose to republish here as soon as my leisure will admit.

In April of the present year, I received a large package of scions, sent by Dr Van Mons. These were forwarded to me from New York, through the kindness of Mr De Wael, who is now sojourning in that city. But in consequence of having been nearly four months on ship board, they arrived generally in bad condition. But the last package which was shipped at Antwerp about the first of March, was received here, via New York, about the middle of May. This, by a short and timely passage, and by being doubly protected by an envelope of straw, fortunately came in better condition than any heretofore received.

The scions of the varieties of the apple being sent in the former package, were nearly all lost, as were all those of the apricot and the peach; but the vines of two kinds, one of them *very early*, appear to have lost none of their vitality.

Agreeable to the intentions of Dr Van Mons, I have transmitted one half of every kind to our friend Mr Manning, believing that by the aid of his intelligence and skill, and our united exertions, we may be enabled to save one specimen at least of every kind which we found alive. His successful practice and manner of securing the kinds being by grafting, according to the most sure and approved modes. But my most sure mode in practice is by inoculations on thrifty stocks; after the complete union of the bud and stock has been effected, and the bud has begun to grow, the stock is headed down.

In the list of pears sent this year, there are a few repetitions of some of those kinds sent to us last year, and which list I published, and especially of all those kinds to which I have still preserved the asterisk, as these were all lost in that year. All, however, with this mark † are lost to the country, both the renewals of the former year and also those which had never been received before, having perished on the passage.

VARIETIES OF NAMED PEARS RECEIVED FROM M. VAN MONS, IN 1836, ALL WHICH IT IS EXPECTED WILL LIVE EXCEPT THOSE MARKED THUS †.

1 † Arbre Courbe
2 Arbre Mort
3 Baud
4 Beauchamps
5 *Belle Alliance
6 †Bergamotte Blanche
7 ———— Libboten
8 †Betterave Nova
9 Beurre Bronze
10 ——— de Mons
11 ——— Epine
12 ——— Liart
13 †*—— Manning
14 †*Bezi Crassanne Tardive
15 †*——— de Louvain
16 *——— du Printemps
17 † ——— Vaet
18 †Bon Chretien Fondante
19 Bonnet
20 *Bosc d'Eté
21 Bosch Peer
22 Bosman's franc
23 ——— du greffe
24 Boucquia
25 Brandes
26 †Cadet de Veaux
27 Caen de Franc
28 †Calebasse Bauchau
29 †——— Marianne
30 †——— Verte
31 Camperette
32 †Canning
33 *Capiaumont
34 †Capucine Van Mons
35 Charles de Bologna
36 *Charlotte d'Anvers
37 Claire
38 †Colmar de Metz
39 Colmar Epine
40 †——— Nova
41 Constantinopler
42 *†Crommen Boom
43 Curtel
44 Dearborn
45 †Delices de Charles
46 Delices d'Hardenpont
47 ——— de Jodoigne
48 De Meester
49 †Des Bois
50 †Dewez
51 †Diel
52 Dillen
53 Doyenne de la Cour
54 †——— long
55 ——— long bras
56 Dumortier
57 Duval
58 Fondante de Mai
59 †Grande Bretagne Precoce
60 ———— tardive 1833
61 †———— soleil
62 †Grise de Mons
63 *Gros Colmar Van Mons, ou de 2 ans.
64 Grosse Verte
65 †Hatel
66 Henckel
67 Henriette
68 Imperatrice
69 Invalides
70 Jean d'Autriche
71 Josephine
72 Josephine Nova
73 Kenrick
74 Lobo * * * *
75 Leon le Clerc
76 Leopold
77 Leutin
78 Lombard
79 Longue Verte
80 Louise de Bologna
81 *Louise de Prusse
82 †Marechal
83 †Marie
84 Marie Louise
85 Marie Louise Nova
86 Marlij
87 Marulis
88 Meuris
89 †Mondekin
90 M. L. Double imploi

91 †Napoleon
92 Navez
93 Niel
94 Nos**?
95 †Nova Grosse Verte
96 †Siegneur
97 Oken
98 Parent
99 Passe d'hiver
100 Passe long bras
101 Poiteau Nova
102 Princesse D'Orange
103 Quetelet
104 †Roi des Poires
105 Rousselette 1830
106 †Rousselette nova
107 Rameau
108 Sabine
109 Sabine Vrai
110 Saint Jean
111 Sentelette
112 †*Serrurrier
113 †Sucre Verte Nova
114 †Sur Reine
115 †Triomphe
116 Urbaniste
117 Urbaniste forme
118 Vacat au liste
119 †Valche Spreuw
120 †Verte au Mur
121 Witzhumb
122 Vacat
123 No. 163 * * * *

In all about 80 *named* kinds of this list, it is expected will live.

VARIETIES OF PEARS NUMBERED, BUT UNNAMED, RECEIVED OF M. VAN MONS IN 1836, ALL WHICH IT IS EXPECTED MAY LIVE.

Nos. 88, 128, 135, 200, 281, 354, 388, 399, 468, 507, 550, 644, 660, 717, 737, 754, 846, 868, 889, 958, 974, 990, 1012, 1054, 1103, 1155, 1157, 1170, 1177, 1182, 1279, 1295, 1311, 1325, 1334, 1344, 1378, 1386, 1406, 1412, 1419, 1432, 1451, 1513, 1520, 1546, 1572, 1575, 1579, 1586, 1595, 1609, 1629, 1641, 1644, 1653, 1678. In all 57 numbered kinds apparently alive.

VARIETIES OF PEARS NUMBERED, BUT UNNAMED, RECEIVED OF M. VAN MONS IN THE SPRING OF 1835, AND IN THE YEAR PREVIOUS, OF WHICH MENTION ONLY WAS MADE IN THE LIST WHICH WAS PUBLISHED IN THAT YEAR. ALL THESE ARE BELIEVED TO BE LIVING BOTH WITH ME AND WITH MR MANNING.

Nos. 55, 70, 89, 102, 104, 108, 154, 158, 164, 165, 168, 172, 173, 177, 182, 307, 365, 432, 546, 658, 688, 698, 707, 778, 879, 892, 896, 968, 969, 1027, 1028, 1036, 1074, 1080, 1081, 1154, 1190, 1192, 1199, 1218, 1230, 1242, 1253, 1255, 1268, 1274, 1283, 1335, 1336, 1409, 1420, 1454, 1462, 1502, 1530, 1535, 1602, 1618, 1636, 1638, 2127. In all 61 numbered but unnamed kinds received in the former years.

Besides all these, there are also the 70 kinds to which there belongs neither names or numbers, to which Dr Van Mons alluded in the letters subjoined, and which are all pronounced excellent; many of these we hope to save.

Many valuable letters have been received from M. Van Mons in the former years, each individually addressed, one particularly to Mr Manning, received in the spring of 1833, explains a subject to which he alludes in those letters which are here subjoined, in regard to the temporary loss of his voice. This was caused by the breaking in the

fire of a retort containing arsenic, through the carelessness of his assistant or operator, at one of the Professor's Chemical Lectures. The thick fumes of arsenic which, for the security of his audience, he was then obliged to inhale, caused not only the extinction of his voice, but for a time also endangered his life.

The work to which M. Van Mons alludes, as the "*Interesting Cultivator of America*," must be no other than the complete set of the New England Farmer in 13 volumes, which Mr Manning had sent him.

The letters of this year, which have been directed to me from Dr Van Mons, and especially as they seem evidently not designed for me alone, but for others also, for Messrs Dearborn and Manning, I send for publication in your valuable journal. As well also that the knowledge of the unwearied zeal, the noble bounty, the philanthropy, and the disinterested liberality of Dr Van Mons towards our own country should be the more extensively known, and be perpetuated, and spread far and wide.

Nonantum Hill, Newton, June 9, 1836.

My Dear Friends all, — My honorable correspondents, Messrs Kenrick, Manning, Dearborn, — I recommend to you the bearer of the present letter, Mr De Wael, of Antwerp, who, after travelling nine months in England, repairs to America, in order to make you a visit. As a horticulturist, he is equally zealous and enlightened. He is of noble extraction, and of the most honorable personal character. Mr De Wael is the inventor of the graft by a cleft, (*en fente*) executed with the apricot tree. You will learn his method from the journal of Mr Poiteau. Mr De Wael has the goodness to take charge of some grafts for you; of books, he brings you the first volume of my Fruit Trees, of which I have already had the honor to present you with three copies, but which I send again, in case the first should have been detained on the road. I have informed you in the accompanying letter, that everything relating to the correspondence (*resemblance or affinity*) of the fruits in the first volume, whether in names or in forms and varieties, will be found amply detailed at the end of the second volume. I add, also, the sequel to my Chemistry; of which, the two first volumes have reached you with a bundle of grafts. I abuse the complaisance of Mr De Wael, but the opportunity is too good and safe for me not to avail myself of it.

Every graft of the apple is a particular variety, not yet named, nor

even distinguished by a number. I have done ill not to send you some of my apples sooner. The losses I have sustained in that species of fruit, are irreparable; for five hundred original trees, (*piede meres,*) have been exterminated without my being able to take grafts, and there were some among them which surpassed the best pears.

You will this year have saved the best pears I had, and you will be the sole possessors of them; for the grafts I had taken from them, have perished by four months of ardent and uninterrupted droughts, and those which I sent to Mr Poiteau have met with the same bad fate. I see that the winter has been long, in your country, which makes me hope the grafts then sent, reached you before the commencement of the season. We have had in succession two winters without frost, and two summers *without rain.* Thirty storms have each summer threatened to burst upon us, but every time, their explosions have been prevented, by the electrical conductors, (*paratonnenes.*) At length the storms have gathered in regions so high, as to be beyond the control and influence of these conductors, and have burst forth, sending to the earth masses of huge hail stones. Before the introduction of the metallic rods, we had in summer, at every change of the moon, a storm in a low region of the atmosphere, attended with an abundance of soft warm rain; these rains are no longer known.

I am recovering more and more from my double poisoning by the vapor of arsenic. The extinction of my voice has gradually passed away, after having lasted four months.

Our University has been suppressed by a decree of the Representatives; a free Catholic University is established in its place. I am sent to Ghent, twentyfive leagues from here, where the University is preserved. The gardens belonging to the house which I inhabit, will share the fate of my great nursery, — they will be exterminated.

Accept, my very dear and honored friends, the expressions of my lively attachment. J. B. VAN MONS.

December 1*st*, 1835.

My Dear Friends — I have this moment received, just as I am sending my packet to the Diligence, the rich presents which your affectionate goodness again makes me. I received a letter from Mr Kenrick, one from Mr Manning, three journals. I see, also a pamphlet of Sept. last. Your letters are dated Oct. 26, a month and five days ago; what a rapid passage! These journals are fallen from

heaven to assist me in the composition of the *Horticulteur Belge*, which at last has fallen into good hands, those of the celebrated Mr Drapier, with whom, and Mr Borij de Saint Vincent, I have compiled the *Annales Generales des Sciences Physiques*. There is, also, the Orchardist, and a treatise upon Silk and the Mulberry Tree. I shall see them all; I shall refresh my spirit in reading them all, and I shall make ample extracts. I had not sufficient time to read your letters, and much less to answer them, but for the occasion of transmitting to you by a safe conveyance, and one particularly friendly both for you and for me, the things which accompany this. I shall send to you again in about eight days, by the house of Antwerp, and I shall answer your letters by the post, if I see that a prompt answer is necessary. With sincere and unfeigned affection, adieu.

From your very much attached,
and very grateful servant and fellow laborer,
J. B. VAN MONS.

The graft of the apricot tree is of extraordinary quality; Mr De Wael will willingly show you how to place it *en fente*. I had forgotten to speak of it.

[The above letter must have been written the beginning of December, 1835.]

My Honored Correspondents — I present you with a variety of things: a graft of a walnut tree which begins to vegetate a month and a half after all others; a graft of a peach tree to be placed on a free stock of its own species by the crossette; one of the apricot tree; crossettes of vines raised from seed; scions for grafting from my free stocks of the fifth renewing, — every scion will give you an excellent variety. They will be yours when I shall no longer possess any, for I am compelled to remove the original trees (*arbres meres*) without having any place to set them out in. In short, here are grafts of all the kinds that you request in your letters, and many others that you do not request. I make up this bundle on the first of March.

I ought to have begun by thanking you for the precious journals which you have lately had the goodness to send me. This packet, and that anterior to the departure of Mr De Wael for your country, reached me in less than a month; I have made ample use of them in the *Horticulteur Belge*, which is now edited by Mr Drapier, with whom, and M. Borij de Saint Vincent, I have published the *Annales Generales des Sciences Physiques;* I add the first sheet of these Annales, also the continuation of the *Agriculture Belge*.

To return to Mr De Wael, who, as he set out from here in Oct. last, must long since have joined you. You will have had pleasure in making his acquaintance. He has had the goodness to take charge of a bundle of grafts for you, of which some are perhaps here repeated, of the repetition of my *Pomonomie Belge*, and of the fourth and fifth volume of my Abridgement of Chemistry. I could have wished to add the second volume of my *Pomonomie*, but it is not finished; only three fifths of it are printed. There will, perhaps, be a third volume, on account of the length of the *Catalogue raisonné* of my Culture of Louvain, which is to be annexed to it. In this Catalogue you will find complete information as to all that you have received, all that you may now receive, and all that you shall receive for the future. With every number will be given the names or the figure, the size, the quality, and the epoch of maturity of the fruit. If in the verification of what are left me, I find that in pears of the first rank (I do not speak of apples and other fruits,) my losses do not exceed from eight hundred to one thousand varieties, I shall esteem myself truly happy. I am driven anew from two of my gardens; from that belonging to my habitation, and from a very large one, in which, at the destruction of my nursery, I found a refuge for most of the things that I was able to save. The first, with my dwelling, has fallen to the share of the University, (Catholic,) which has taken the place of ours. The other belonged to a suppressed convent, which has just been sold to a cloth manufacturer. I am myself expelled, and have been obliged to seek an abode where I could, for refuge for my furniture, my papers and my person, and in the embarrassment of a removal from a palace to a house of limited dimensions. I am still Professor at Ghent.

I do not speak of the superb copy of the second edition of the Orchardist, with which Mr Kenrick has had the goodness to favor me. This excellent work well deserves a success so brilliant. I have also received his treatise on the cultivation of silk, and the management of the mulberry tree; this last will be translated and published, perhaps at the expense of the government. Likewise the Catalogue of his Nursery. My *Pomonomie* has also gone off rapidly; thanks to the indulgent things which you and Mr Poiteau have said in regard to me.

I also thank Mr Manning, for the continuation of the interesting Cultivator of America, which he has the goodness to send me. You overwhelm me with so many benefits; expressions fail me to man-

ifest my gratitude. And Mr Dearborn, that eloquent painter of the progress of the human mind and of philosophic virtue, who is pleased to mingle my name with the elucidations of his sublime conceptions, — what can I do for you? My letters, and Mr De Wael will have informed you that I have recovered my health. I did not take any remedy. I sustained my strength by as much nourishment as I could take. My confrere said to me, "You are suffering yourself to die." I am not dead. I wrote my first volume pausing after every phrase. I rose at half past four or five o'clock. I have never in my life taken a remedy, and have never remained in bed a minute from indisposition, and only once in consequence of a shot in the leg.

There are seventy scions of as many different kinds: Beurre Manning, Libouten, and others, will be found under their numbers, but I cannot tell how, because my register is locked up and removed.

Next year I shall have inserted in a printed catalogue, such of my varieties as you succeed in propagating and thus avoid duplicates, (double emplois.) I have not, or do not know that I have, the Adelman, which is the best pear I ever gained. It must exist in Germany, but I am ignorant which of my correspondents possess it.

We have had hard frosts this winter. For fifteen days it has done nothing but rain. I am, in haste,

Your very much attached,
and sincere friend and fellow laborer,
J. B. VAN MONS.

Art. II. — *Remarks on Ornamental Hardy Herbaceous Plants.*

By Mr Joseph Breck.

(Continued from page 190.)

Natural order Leguminosæ. This large division of plants contains more than three thousand species, some of which are among the most useful and familiar with which mankind are blessed. The pea and bean are some of the most prominent esculents in the kitchen garden; while the Trefoil, Lucerne, and other staple articles, are of great importance to the farmer.

Many of the species are trees and shrubs, highly ornamental, especially those which are indigenous to tropical regions. It also contains

many beautiful hardy herbaceous plants, as well as many which in our climate require the protection of the hot or green-house.

Among so great a number of plants, it will naturally be supposed that their properties must essentially differ; and this is the case. Some are wholesome, and used for food by man and beast; some of the species are valuable for their timber, others for the coloring matter that is extracted from them, or for their various medical properties, and a few are poisonous.

This order is divided into three *sub-orders*, and these again into *tribes* and *sub-tribes*. Lupinus is the only genus containing hardy herbaceous ornamental plants in the *sub-order* Papilionaceæ, *tribe* Phaseoleæ. All the species of this *sub-order* have papilionaceous flowers, *(butterfly shaped, or like the pea blossom.)*

"Lupinous said to be derived from *lupus*, a wolf, because this plant devours, as it were, all the fertility of the soil; but this is of a very doubtful explanation."

Class Diadelphia, *(stamens united in two separate parcels.)* Order Decandria (10 *stamens*.) Calyx two-lipped; Anthers, five oblong, five round; Legume *(pod)* coriaceous *(leathery)*, torulose *(raised in bunches or vein-like protuberances or ridges,)* compressed. In this genus the stamens are united in one set, or monodelphous. Leaves of all the species with one or two exceptions, are digitate, *(when the base of several leaflets rest on the end of one petiole.)* Under the common name of Sun-dials, the annual Lupins of various colors are found inhabiting almost every country garden, where a dozen species may be the extent of the collection of ornamental plants.

One of the most splendid acquisitions to the flower garden of modern introduction, is *Lupinus polyphyllus*, or many leaved Lupin. Although it is about nine years since it was figured and described in *Lindley's Botanic Register*, yet it is still far from being common among us. To Mr Douglas we are indebted for this charming plant, who discovered it on the N. West coast of N. America. We received the seed of this fine Lupin four years since, only one of which vegetated; it produced radical leaves only, the first year, which were multifoliated, and borne on long petioles. The second year it was transplanted with much care into rich soil, having been exposed through the winter to all the rigors of the season without protection. In the month of May the flower stalks began to be developed, and produced in June, spikes of flowers, which were two feet in length, and from three to four feet in height from the ground. The flowers

are disposed in long terminal clusters, of a beautiful azure blue, with a reddish border, forming a kind of whorls, very near each other, round the stem. The leaves are composed of from twelve to fifteen green, lanceolate leaflets, hairy on the under side. The flowers resemble those of blue Sophora, *(Baptisa australis,)* but far more elegant. The third year it flowered abundantly, throwing up numerous flower stems so luxurious that many were broken by the wind before they were secured by stalks. The third year the roots should be divided, as they become large in rich ground; the central part first decays, and finally the whole root perishes, unless this operation is performed. There is also a white variety, the seeds of which we sowed, but none vegetated.

Lupinus perennis, is a well known species, indigenous to many parts of N. England, found frequently in large masses from a yard to rods in circumference, occupying the very poorest sandy or gravelly, arid soil; frequently in company with the pretty *Silene pennsylvanica*, or wild pink, and more commonly with *Viola pedata*, or bird's foot violet, all of which are in bloom about the first of June. It is very difficult, or even impossible, to transplant with success, this fine perennial. The only sure way to propagate it is by seed, which should be gathered before is entirely ripe, as it is scattered as soon as mature, by the sudden bursting of the pod, by which the seed is thrown to a considerable distance. Nor will it succeed, like the last described species, on rich ground; but whenever the seeds are to be sown, the soil should in the first place be removed, or a greater part of it, from a circle whose diameter is three or four feet, and the hole be filled up with a poor gravelly or sandy soil, and the seed sown in the centre.

The flowers are found in the wild state of various colors and shades, from pure white (which is rare) through all the shades of light to dark blue, inclining to purple; the margin of the flowers are frequently copper color, sometimes inclining to red; one variety has flowers of a dull pink. Stems erect, hairy. The digitate leaves are composed of about eight or ten leaflets, which are lanceolate, wedge-shaped, arranged like rays around the end of the petiole, hairy and pale underneath.

Many beautiful Lupins have, within a few years, been added to the list of herbaceous plants, chiefly through the exertions of Mr Douglas in his excursions in N. and S. America, most of which were found on the N. W. coast, from California to Columbia river, which part of the

world seems to be the central position or head quarters of this family of plants, more being found here than in all the world besides. We are unable to point out the most desirable, not having seen many of them in flower. We sowed the seed of Lupinus littoralis, L. rivularis, L. tomentosus, L. mutabilis, L. Crookshankia, and other varieties, the last season, most of which vegetated, but unfortunately were mostly destroyed by grubs, that were very destructive during the severe drought of June and July, to many young plants. Some botanists have placed Lupinus in the class Monadelphia, on account of their stamens being united in one bundle. *Lupinus villosus*, and *L. diffusus* are handsome biennials from the south, with entirely simple, oblong, silky or villous leaves, and producing long showy spikes of variegated purple flowers.

Lathyrus, Orobus, and Vicia, contain some handsome, hardy herbaceous plants, arranged in *Sub-order* Papilionaceæ, *Tribe* Vicieæ. "Lathyrus, from *La*, augment, and *thouros*, anything exciting." The genus has a calyx with the two upper segments shortest; a flat style, villous on its upper side, and widening above.

Lathyrus odoratus, is one of the most beautiful, and also one of the most fragrant of the species, and is deservedly one of the most popular annuals which enrich the flower garden. The varieties are, white, rose, scarlet, purple, black, and variegated. Each variety should be sown by itself in circles about a foot in diameter, three or four feet from any other plant. When the young plants require support, a light neat stake, or rod, should be stuck into the centre of the circle, to which they should be slightly fastened as they advance in height. Some are in the habit of supporting them with brush, which looks very unsightly before it is covered with the vines.

Lathyrus latifolius, or everlasting pea, is a most beautiful, large, diffuse perennial, producing a long succession of large light purple or pink flowers, in clusters of eight or ten each. The plant is suitable for the shrubbery, arbors, or for training to a trellis. When supported, it attains the height of six feet. "It attaches and supports itself, like all scandent plants, by means of the branching tendrils terminating its single pair of broad leaflets, and which twining economical processes are, in fact, reasoning from strict analogy, the abortive rudiments of other sets of leaves, though never developed."

A variety has white flowers. It may be propagated by dividing the roots, or more extensively by sowing the seeds, which ought to be planted where the plant is to stand, as it sends down a tap root to

a great depth. We have dug a root as large as a man's wrist which had penetrated the soil from five to six feet.

Young plants will flower the second year feebly, but the third or fourth year they produce a profusion of foliage and flowers. Some botanists have suggested that it might be applied to agricultural purposes with profit, on account of its yielding so great a quantity of fodder and seed.

There are a number of other fine perennial peas not much known among us, of which, L. grandiflorus is one, with purple flowers in pairs, a native of the south of Europe, four feet high, in June and August.

"Orobus, from *oro*, to excite, and *bos*, an ox; that is to say, nourishing for cattle. The Orobus of the Greeks, was some sort of vetch. *Generic character.* Style linear, cylindrical, downy above. Calyx obtuse at the base, its upper segments deeper and shorter.

Orobus niger, is a hardy perennial with which we have been acquainted for a number of years, and can recommend it as being pretty, with very dark purple flowers, which are produced in June and July; two or three feet high; stem branched; leaves in six pairs, ovate oblong; racemes one sided, many flowered.

Orobus atropurpureus, is figured and described in *Edwards' Botanic Register for May*, 1835. The flowers are a fine purple, in a dense, one-sided, many-flowered raceme, borne on long axillary stems; leaves abruptly pinnate; leaflets linear, which vary from one to several pair. A native of wild places near Algiers. It is also met with in Sicily. In the gardens it is a hardy perennial flowering in May.

Orobus luteus, is considered by some as the handsomest of the papilionaceous tribe. We have had it in our collection, but not in perfection; for some cause or other it has not flowered.

Orobus coccinea caused us some disappointment. The flowers, instead of being scarlet, are brick color, and very inferior in appearance. We sowed the seeds of O. Fischeri, and other species, last season, and shall have an opportunity to test their hardiness, and other qualities, the coming season.

"*Vicia*, from *Vincio*, to bind together; twining tendrils. In this genus the Garden bean is found, *Vicia Faba*, and its variety, or English Bean, as it is frequently called, known in the seed stores as the Mazagan and Windsor Bean. A number of the species are used for agricultural purposes in Europe, and many, also, serve to make up a variety in the borders. The genus has pinnate leaves; styles bearded

beneath the stigma; nearly all are twining plants, of low stature, and interesting to the botanist, at least. The species that have come under our observation, are pretty, and some worthy of attention.

In *Sub-order*, Papilionaceæ; *Tribe* Loteæ; *Sub-tribe* Galegeæ, the only genera containing plants under consideration, are *Tephrosia* and *Galega*, which afford a few beautiful species.

"Tephrosia is from *Tephros*, ash colored; in allusion to the color of the leaves. *Character of the genus.* Teeth of the calyx subulate, subequal; stamens monodelphous; pod compressed, coriaceous."

Tephrosia virginica. Synom. *Galega virginica.* A species, indigenous to some parts of New England, and which we think has been sadly neglected by those who are fond of beautiful plants, as we consider it one of the finest papilionaceous flowering plants, this section of the country affords.

It is found growing in large bunches, on the margin of some of our driest sandy woods. The roots are very long, slender, and tough, which has given it the name of catgut. The flowers are in a short terminal raceme; banner of the corolla whitish yellow, downy; wings scarlet; keel whitish and red; calyx woolly, red, with acute segments; legume linear, falcate backward, compressed; leaves alternate pinnate, with from eight to ten or twelve pairs of oval oblong acuminate leaflets, with an odd one. The whole plant is covered with a pale green down; one foot high; flowers in June and July. We know not the properties of this species, but *T. toxicaria*, a spreading shrubby plant from South America, has been introduced and cultivated in Jamaica on account of its intoxicating qualities. "The leaves and branches well pounded, and thrown into a river or pond, very soon affect the water, and intoxicate the fish, so as to make them float on the surface as if dead; most of the large ones recover after a short time, but the greatest part of the small fry perish on the occasion." *T. virginica* has been placed by some botanist in the genus *Galega*, "a name of unexplained meaning. The species are handsome border flowers."

Galega officinalis, with blue and a variety with white, and *G. orientalis* with white flowers, are said to be ornamental. Calyx with subulate nearly equal teeth. Legume with oblique streaks between the seeds. From three to four feet high flowering in July and August.

In the same division and tribe of Leguminosæ, *Sub-tribe* Astragaleæ, is the genus Astragalus, and in *Sub-tribe* Chitoriæ, genus

Glycine, which contain species of herbaceous plants suitable for the border. "Astragalus, from *aster*, star, and *gala*, milk. The name was given by the Greeks to one of their leguminous plants, but it is not known to which. The modern genus is composed of plants, the greater number of which are ornamental." Some of the species produce the Gum tragacanth of commerce. The genus is large, containing more than one hundred species, a small portion of which are found in the United States. Only a few of the ornamental species have found their way into our gardens. Most of the family have delicate pinnate leaves. The color of the flowers are white, sulphur, yellow, pink, violet, red or purple.

Character of the genus. Calyx five toothed; keel of the corol. obtuse; legume with a longitudinal half breadth partition attached to one edge, incurved at the suture below. *A. christiánus*, *A. alopecuroides*, *A. vulpinus*, *A. capitatus*, *A. narbonensis*, and *A. falcatus*, with many other species, are desirable plants for the borders.

"Glycine, from *Glykys*, sweet; the leaves and root of one species are sweet. *Glycine frutescens*, and especially *Glycine sinensis*, (now *Wistaria consequena*,) are most beautiful hardy climbing shrubs, with long pendulous branches of blue flowers, like the Laburnum."

Glycine apios, or ground nut, indigenous and common in rich moist woods and thickets, produces flowers in axillary, crowded racemes, of a blackish purple, and makes a pleasing addition to the various ornaments of the border. Its roots are strings of oblong cylindric tubers, frequently known by the name of Pig, or Indian potatoes; when roasted or boiled they are eatable, having a flavor approaching the common potato, and said to have made an ordinary part of the vegetable food of the aborigines. The leaves are pinnated, each consisting of from five to seven ovate acuminate leaflets. Stems round, twining; from six to eight feet high; flowering in July and August. Calyx two-lipped; keel of the corolla turning back, the banner at the tip; legume many seeded.

Hedysarum. *Sub-order*, Papilionaceæ. *Tribe*, Hedysareæ. *Subtribe*, Euhedysareæ. "Hedysarum is from *Hedys*, sweet, and *aroma*, perfume or smell; some of the species have fragrant flowers."

Calyx five cleft; keel of the corolla obtuse; loment (a pod resembling a legume, but divided by transverse partitions,) jointed, the joints compressed and one seeded. In this genus is the remarkable *Hedysarum gyrans*, or turning Hedysarum, a green-house plant, a native of Bengal near the Ganges. *Hedysarum alhagi*, is another

curious species, from which is obtained Manna; it is chiefly gathered about Tauris, where the shrub grows plentifully. The genus is one of considerable importance in European agriculture.

Hedysarum onobrychis, under the name of Saint-foin, is much cultivated in France and other countries, and considered by some to be one of the most valuable herbage plants, which Providence has bestowed upon man. Most of the family are uninteresting; but a few species may be selected for the borders.

Hedysarum coronaria, is an esteemed border biennial, with scarlet flowers; it is a native of Italy, and considered a splendid plant, attaining the height of four feet. Leaves pinnate; leaflets roundish elliptic; joints of the pod roundish aculeate (being furnished with prickles,) naked. We have often sowed the seeds of the French Honeysuckle, as it is commonly called, and raised a plenty of fine looking plants, and as often had them winter-killed. It appears to require the protection of a frame to keep it through the winter. It is called in France, *Sainfoin à bouquets*, and is there much admired.

Hedysarum alpinum, is said to be an elegant perennial, a native of Siberia, four feet high, producing purple flowers in long axillary racemes in June and July; leaves pinnate; leaflets, ovate lanceolate, smooth.

Hedysarum saxatile, with light yellow flowers, and *H. grandiflorum* with purple, are also said to be ornamental perennials.

Hedysarum canadensis, an indigenous perennial, is an ornamental plant suitable for the shrubbery or back of the border; four feet high. The flowers are purple on axillary and terminal branches, produced about July. Stem erect, hairy; leaves ternate; leaflets oblong lanceolate; stipules filiform; pods rough, consisting of four or five joints, which are imperfectly triangular, their sides curved, and their angles obtuse. Another handsome indigenous species is *Hedysarum cupidatum* with large purple flowers in racemes upon the terminal and lateral branches, in July. Stem erect, smooth; leaves ternate; leaflets large, smooth, ovate, acuminate. Loments, or pods, larger than the last, long and pendulous, with about six diamond shaped joints, which, with their peduncles, are covered with minute hooks, rendering them adhesive to garments when brought in contact with them. The genus *Lespedeza*, "named by Michaux, in honor of Lespedes, a governor of Florida, who protected that botanist in his botanical researches," is mostly composed of North American herbaceous plants, and hardly distinguishable from *Hedysarum*. The only essential dif-

ference is in its lenticular (form of a convex lens) one seeded, unarmed loment. "Of this rather elegant flowered genus there are a considerable number of species; they are either tall or diffuse herbaceous plants, with purplish flowers, and trifoliate leaves, subtended by minute bristly stipules." The plants, leaves, and flowers, are generally smaller than those of the preceding genus. We have six or eight species growing wild in the vicinity of Boston, most of which are pretty plants, and would give variety to an extensive border.

Coronilla. *Sub-order* Papilionaceæ. *Tribe* Hedysareæ. *Sub-tribe* Coronilleæ. "Coronilla, from *corona*, a crown. Its pretty flowers are dispersed in little tufts like coronets. *C. Emerus* is a popular shrub of much beauty." With us, however, the winter has always been too severe for it in the open ground, destroying it down to the ground every year.

Coronilla varia, is the only hardy herbaceous perennial with which we are acquainted in the genus. It is worthy a place in the flower garden, provided it is kept within due bounds. This may be done by digging round the plant every spring with a spade, and removing from the ground all its young, creeping roots, which otherwise would be too neighborly with the other plants in its vicinity. Treated in this way, if the soil is not very rich, it will give an immense number of its pretty coronets of purple and white, or pink flowers, in long succession, and they are generally admired. Leaves pinnate; leaflets numerous, lanceolate smooth. Stem lax, four feet high, requiring support from wire or light rods. The juice of the plant is poisonous.

Leguminous plants in Class Decandria, (ten stamens). Order Monogynia. There are quite a number of plants in this *Natural order*, which, in the artificial arrangement, are necessarily placed in class Decandria, on account of their ten stamens being distinct from each other, although from corresponding symmetry, it would seem they should not be separated into different classes. "Thus for example, *Baptisia* has exactly the corolla of the Pea; but as all the stamens are separate, it finds place in the simple class Decandria, instead of that of Diadelphia, which plants only differ from the present in the union of the filaments into two unequal parts. It would, perhaps, have been better, at least where natural classification is at all concerned, to have merged the mere character of an union of filaments, and classed such plants rather by the number and disposition or insertion of their stamens, by which means, in this and other cases, the artificial and natural methods might have been more hap-

pily and conveniently combined. Thus mere sections of the same natural order Papilionaceæ, would not need be sought for in two remote classes."—*Nuttall.*

"Baptisia, from *Bapto*, to dye; in allusion to the economical properties of some species; a blue dye is extracted from the leaves." Calyx half four to five cleft, two lipped; petals of equal length; standard reflexed at the edges; stamens deciduous; pod ventricose stalked, many seeded.

Baptisia australis, was formerly *Sophora australis*, and is commonly called by that name. The genus *Sophora* has been much altered, and now consists chiefly of fine trees. It contains, however, two species of ornamental herbaceous plants. S. flavescens with yellow flowers, a native of Siberia, and S. alepe chroides, with blue flowers, from the Levant; the former two, the last four feet high.

Baptisia australis, is considered a handsome border flower of the easiest culture, exceeding hardy and indigenous to some parts of N. America. It produces its blue flowers in terminal spiked racemes in June. Leaves ternate stalked; leaflet cuneate lanceolate; stipules longer than the stalk, lanceolate. A variety has white flowers.

Baptisia tinctoria, or Wild Indigo, is indigenous, and very common in dry pastures and sandy woods. It has small yellow pea-shaped flowers, which are borne on terminal racemes of two or three each. The plant is very much branched, with small, smooth, ternated subsessile leaves. Pods ventricose (swollen) pedicellated. Stipule setaceous, obsolete. This plant has been employed as a substitute for indigo. We cannot recommend this species as showy, or worthy to be introduced only in large collections.

Cassia. *Sub-order* Cæsalpineæ. *Tribe* Cassieæ. All the genera which we have described in Leguminoseæ, thus far, have papilionaceous, or pea-shaped flowers; but in this section of the natural order we find flowers of a different shape. "The genus Cassia presents a very anomalous structure, having a fine leaved calyx, and a spreading or open corolla, of five nearly equal petals. The stamina are unequal in length, and the three upper ones have blackish sterile anthers, the three lower have elongated or rostrate anthers, and are seated upon longer incurved filaments. The legume is flat and membranaceous, but does not readily open. All these plants have pinnated leaves, which remain folded at night; and yellow clustered flowers."

"Cassia is from Arabic; *Katsa*, to tear off." This large genus

contains but one hardy herbaceous perennial, our *Cassia marylandica*, a tall plant, common in many places by the road sides, and in moist places, bearing a profusion of flowers in August. It is a suitable ornament for the shrubbery. The leaves possess the same properties as the senna of the shops, and frequently used as a substitute, requiring, it is said, a larger quantity to produce the same effect. A number of the species possess the same properties, but *C. orientalis* is the true senna; an annual from the Levant. *C. acutifolia* and *C. senna* also produce the senna of Commerce.

Sub-order Mimoseæ. "Mimosa and its allies have, instead of the irregular arrangement which characterizes a papilionaceous flower, its parts of fructification disposed with the utmost symmetry." Some botanists seem to think that this and the last grand division of Leguminoseæ, deserve the rank of independent orders. With few exceptions, their fruit is leguminous, but their flowers are very differently constructed from those in sub-order Papilionaceæ, which, by the way, contains about three fourths of the genera in the whole order. In the sub-order Mimoseæ, we find Mimosa, Acacia, and a few other genera, most of which are widely separated from the other sub-orders in Linnæan arrangement, having their station in Class Polygamia: Order Monœcia; a class which is now generally abolished, it being inconvenient in practice, and incorporated with Diœcia. The genus Acacia contains many species, particularly valuable in the green-house department, flowering the greater part of winter and spring; some of the species have elegant bi-pinnate leaves, and most are beautiful trees or shrubs; but not one species that is hardy.

All the species of the elegant and curious Mimosa, are too tender for the open ground. *Mimosa sensitiva*, Sensitive Plant, is a well known annual from Brazil. It succeeds in the border during the summer months, if the seed is sown in March or April in a hot-bed, and the plants forwarded in pots, and turned out in June; thus heated, it will flourish and ripen seeds in favorable seasons, and grow to a large size.

This singular plant calls forth universal admiration; it has been a puzzle to many a philosopher. The cause of its sensitiveness has lately been more satisfactorily explained; yet it is still shrouded in mystery. The plant is most irritable in the greatest heat. Dr Darwin thus characterises it:

> "Weak with nice sense the chaste Mimosa stands,
> From each rude touch withdraws her tender hands;

Oft as light clouds o'erpass the summer glade
Alarmed she trembles at the moving shade,
And feels, alive through all her tender form,
The whisper'd murmurs of the gathering storm;
Shuts her sweet eye-lids to approaching night,
And hails with freshen'd charms the rising light."

ART. III.—*Levick's Incomparable, or Tipped Dahlia, &c.* Communicated by J. B.

THOSE who were present at the horticultural exhibition at the Odeon last autumn, and who observed the splendid show of Dahlias, will, undoubtedly, recollect with pleasure, the one of pre-eminent beauty, called "Levick's Incomparable," the color of which was scarlet, each petal being regularly tipped with pure white. As most of the flowers produced by this fine variety come selfs, or without the tipping of white, it may be interesting to some to become acquainted with the experience of growers of this flower, on the other side of the Atlantic. I therefore make the following extracts from Harrison's Horticultural Cabinet, published monthly in London, a work containing much practical information.

"*Levick's Incomparable Tipped Dahlia.*—An anonymous correspondent, in page 47, has made inquiry about the method of treatment required with Levick's Incomparable Tipped Dahlia, in order to have it produce tipped flowers. I have a plant of the sort growing in poor soil, which I had been advised to cultivate it in; and although there is an abundance of bloom, all are of dull red, not a single tipped bloom. I beg that Mr Levick, the raiser of the plant, or some correspondent who knows the suitable treatment, will favor us with the mode of culture. JOHN EMORY.

Pimlico, Sept. 3, 1833.

"*Answer to Mr John Emory, of Pimlico, on the Tipped Dahlia.*—I think I cannot better answer your respectable correspondent, Mr Emory, than by giving a short history of the Dahlia in question, which was named by John Ward, Esq., 'the Incomparable,' on account of its eccentricity. I raised it from seed gathered from an old sort known here as Wells's Comet, in 1827. At first, I thought it very much resembled the sort it sprung from; but I observed many

buds on the south side of the plant of a pale lilac color, and when they came into bloom, I was surprised to find them tipped with white. Many individuals supposed the tipping was produced by some chemical process. The year following, I struck a considerable number from cuttings, and then divided the old roots according to the number of shoots, all of which I planted in various situations. Some were planted upon an old onion bed, which had the year before been manured with night soil, and nearly all the flowers tipped. Others were planted on a north aspect, upon the site where an old thorn hedge had been stubbed, and all of them tipped. Others were planted in the regular way, and some tipped, and others did not. The year following, upon the above spots, scarcely any tipped. I was advised to try peat, river sand, and half rotten dung, and again all were self colors. I gave Mr Paxton (gardener to his Grace the Duke of Devonshire,) a plant, which was planted on a mound of rotten leaves, sand, &c., and every bloom was most beautifully tipped. The following year, Mr Paxton set a large quantity in the most conspicuous places, and, to his great disappointment, there was not a single tipped bloom. Any plan that may be taken cannot be depended upon; however, I would recommend maiden soil, rotten leaves, sand, and a little half rotten dung mixed together, to plant in; and, if the ground should be strong and wet, I would recommend a quantity of stone to be put, to act as a drainage. If the plant is grown too luxuriant, it seldom or ever produces tipped flowers. The more dwarf it is grown the better. Many persons in this neighborhood plant them in 12 sized pots, and, at the proper season, (say about the twelfth of May,) plunge the pot where they wish them to bloom, and frequently cut off the fibres which grow over the edge of the pot. This plan has been often very successful. JOHN LEVICK."

Sheffield, Oct. 17, 1833.

"*On the Treatment of Levick's Incomparable or Tipped Dahlia.*—Observing some of the correspondents to the *Floricultural Cabinet* are desirous of information on a method of treatment calculated to grow the Incomparable Dahlia with tipped flowers, I send you the method which I have adopted, and by which every blossom becomes beautifully tipped. Instead of planting in the soil of the border, I dig out a large hole, fill it up with well rotted dung, and then plant the Dahlia therein. After having planted the Dahlia, and spread two or three inches of soil over the dung to make a neat finish, as well as to

prevent evaporation from the dung. The above method has succeeded to my utmost expectation. WILLIAM BARRATT."

Wakefield Nursery, Nov. 6, 1833.

NOTICE OF STENACTIS SPECIOSA.—"*Stenactis Speciosa.* Syngenesia, Polygamia, Superflua, Compositæ. A hardy perennial, native of California, sent from thence by Mr Douglas, to the London Horticultural Society. The flowers are very handsome and shewy. A bed of it would have a splendid appearance. It grows two feet high, and flowers from July to October. Although a perennial, seedlings flower very freely the first year, and so early as to perfect abundance of seeds, and may thus be treated as an annual. Flowers from one to two inches across; the color of the ligulate petals of the ray are dark violet, and the disk is a deep yellow. Culture: increased by seeds, or division of the plant; soil, rich loam. Stenactis, apparently from Stena, to sigh: — the application we do not know."—*Harrison's Horticultural Cabinet.*

Stenactis Speciosa has already been noticed as being hardy, (see page 240 of the present volume). It answers to the above description, and will prove a valuable acquisition to the flower border. Its flowers have already begun to expand, (June 20th,) and give promise of a long succession; some are double, but mostly single. Its ligulate rays are very numerous, and the flowers resemble some species of our native *Asters*, but much larger. Leaves lanceolate acuminate undulate, sometimes contorted, sessile, margins ciliate, stem erect glabrous, (smooth). With me, it gave no indication of flower buds the season of sowing, although the seed was sown early, and we were favored with a remarkably fine autumn the past season for the perfection of plants. I think, therefore, there must be some mistake about its producing flowers the first season, as I had more than fifty plants.

PETUNIA VIOLACEA.—"*Petunia Violacea,* Purple petunia. Pentandria. Monogynia. Solaneæ. Synonyms, Salpiglossis integrifolia. Nierembergia phœnecia.

We adopt the first name in preference, for the followiug reasons. Salpiglossis is a genus more common in this country, with didynamous stamens and an imbricated corolla, two highly important characters, which are wanting in this plant. Nierembergia is, like it, pentandrous; but the peculiar form of the corolla, the absence of teeth upon the disk, and the singular lunate stigma of that genus, renders it im-

possible to place this in Nierembergia without violating every principle of generic distinction; if there is any one genus in Solaneæ more natural and more positively defined by obvious and important characters than another, it is Nierembergia, so called, with which this ought, on no account, to be confounded. But from Petunia, of which the now common Petunia nyctaginiflora may be taken as the type, the plant before us differs in nothing whatever, except the inflated tube of the corolla, and the size of its embryo: Petunia is remarkable for the thickened bases of its filaments, which all arise upon the same plane from the middle of the tube, for its capitate stigma, the oblique limb of its corolla, the leafy segments of its calyx, and for its disk, which bears a distinct tooth on each side where it touches the suture of the ovarium. Now there is not one of these highly characteristic marks, in which this plant differs from Petunia, to which we, without any scruple, refer it."—*Dr Lindley.*

I received the seeds of the above plant this spring from Mr George C. Thorburn, under the name of Nierembergia violacea, from which I have raised numerous plants, some of which have begun to shew flowers, and proves to be the same as Petunia Phœnecia, so universally admired the last season in the vicinity of Boston. It is very perplexing to the florist, to receive seeds under so many different names. We ought to obtain the true name, as soon as some eminent botanist has decided upon it. This Dr Lindley has done nearly two years since, and we can surely confide in him, as being the first rate authority.

Lancaster, June 20, 1836.

Art. IV.—*Miscellaneous.*

On the use of Camphor in Horticulture.

Camphor is dissolved in alcohol until the latter is saturated; the alcohol is then put into soft water, in the proportion of two drops to half an ounce. Withered, or apparently dead plants, put into this liquid, and allowed to remain there from two to four hours, will revive, if they have not been completely dead before being put in.

On the Propagation of Vines.

Cuttings are made from one and a half feet to two feet in length, and all the buds removed from them except one at the upper extrem-

ity. The shoot is then laid in the soil, to the depth of six inches, the end having the bud being brought up to the surface. A vigorous shoot is made in the first year; and in the second year the plants, if not removed, will bear fruit.

On the Preservation of Grapes and Plums.

At Berlin, grapes are preserved by cutting the bunch when ripe with about one foot of the wood, above and below the footstalk. The ends of the wood are dipped in hot pitch, to keep in the moisture, and the bunch is then hung up in a dry place. The Quetch plum is preserved till March by the following method: — Gather them when perfectly ripe and dry; put them in a glass jar or bottle, closely tied up, and pitched so as to exclude the air, and then bury them in dry soil seven or eight feet deep, so as to be out of the reach of any change in temperature or moisture. When taken out, they must be used immediately.

On Shortening the Tap Roots of Trees.

The following principles are laid down:

1. An injury to any one part of a plant occasions a change in the natural developement of the other parts.

2. Roots and stems are always in a certain degree reciprocally proportionate to each other.

3. The tap root does not form a part of every plant; but, where it does so, it is an essential part of that plant.

4. By shortening the tap root, one or other of the following consequences will result: — tender plants will be more easily destroyed by severe weather; all sorts of plants by dry weather, from their roots not being so deep in the soil: the wood of the timber trees will be less durable, their trunks shorter, and their heads broader and less high; and fruit trees will blossom earlier and more abundantly, and their fruit will be larger and better flavored.

5. To transplant trees without injuring their roots, is difficult in proportion to the age of the tree, and the extent of the roots.

6. All transplanting ought to be done when the trees are young, and then only can the roots be cut without injury.

7. When the tap root descends into a bad subsoil, it brings on diseases in the tree.

The general conclusion which the writer draws, is, that where the largest and best timber-trees are an object, the seeds should be sown

where the plants are to remain, and, consequently, the tap root never injured; but that, in fruit trees, it should always be shortened, to cause them to spread out horizontal roots near the surface, among the nutritive soil.—*Transactions of the Prussian Gardening Society.*

ART. V.—*Extract from a Tour through North America, together with a Comprehensive View of the Canadas and the United States.* By Patrick Shirreff, Scotland.

"FROM whatever sources arise the materials which compose and sustain organized bodies, no symptoms of decline can be discovered in them. Nature seems to be a system of continued reproduction, and, when aided by man, of progressive increase.

"The quantity of matter which has been organized since the beginning of time, must be immense. But, whether the world is viewed in whole or in portions, nature has no appearance of decay, but seems a manufactory producing new fabrics, which are again reduced to their elements, in endless succession. Generation succeeds generation, and year after year furnishes sustenance. In the operations of nature there is no loss of materials, and when they are aided by human industry, she generously rewards man with an increase of her returns, and continues to reproduce the increase. The bounties of nature seem inexhaustible, and, in some measure, proportioned to man's industry.

"The system of nature, such as I have ventured to describe, may be illustrated by the details of the farm. Pastures, which have continued under the influence of nature, annually yield herbage without decrease. When they are stocked with sheep, man is rewarded with an increase of the animals, and the herbage is reproduced as before. If the pasturage is improved by draining and top-dressing, there will be an increase in the returns from sheep, and the improvement in the pasturage continues from year to year. When an improvement in the sheep is effected, there will be an additional return from them, which, by continued attention, becomes permanent.

"When pasturage is superseded by grains and roots, their increased returns above pasturage are the reward of cultivation; and drainage, manures, and labor, greatly increase the returns. In such a system of farming man acts a prominent part with nature, and skilful indus-

try is required to continue the increase. Without skill and industry, the returns from cultivation yearly diminish, and ultimately fall short of those from pasturage or undisturbed nature. In this case it is not nature but man which fails to do his part; and the decrease may be considered a just retribution.

"A reflecting mind will discover much evidence of nature's economy throughout the universe; and the farm supplies familiar illustrations. Cows and sheep, by consuming grass, yield butcher meat, milk, butter, cheese, and leather. These varied fabrics emanate from the same source, and, when reduced to their elements, may again enter into the composition of grass. The straw of grain crops, and other vegetable matter, after being eaten by, or trampled under the feet of animals, decomposes, and enters into wheat, barley, and turnip, or any other plant. In this manner the vegetable and animal kingdoms assist each other; and so perfect is the economy of nature, that none of her materials are lost in the intercourse.

"By judicious management, the fertility of a farm may be maintained, or its productions reproduced year after year; the produce usually disposed of, being the reward of cultivation. If such produce were to be consumed on the farm, its fertility would be augmented, and the reproductive and progressive increase of nature, when assisted by man, exemplified. But the progression in fertility is checked by excessive luxuriance, which diminishes the returns. Thus lavish and niggardly cultivation is both punished, and illustrative of the maxim to use the things of this life without abusing them.

"Man seems to have been endowed with rational powers for supplying himself with the means of subsistence, which he accomplishes chiefly through the vegetable and animal kingdoms. Vegetables directly minister to his wants in various ways, and indirectly, through domestic animals, which are altogether dependent on them. The farm illustrates the direct supply in the production of wheat, potatoes, and flax; the indirect supply in butcher meat and wool. In farm economy, vegetables and animals may be viewed as manufacturing machines, assisting man and each other, and the united results of which are necessary to the formation of certain fabrics, such as milk. From this source man is supplied with many of the luxuries, as well as the necessaries of life. The results of the mulberry tree, silkworm, and cochineal insect, are united in some of the lustrous clothing of the fair sex.

"The materials entering into organized life may be varied, and

partly unknown to man. The most important elements of them, however, are to be found in air and water, and may, therefore, be said to pervade the universe. Should a difference of opinion exist regarding them, it is encouraging for the farmer to know that they abound every where within the sphere of his operations.

"The localities for manufacturing sustenance are almost as varied as the machinery of plants. The sea, air, and exterior of every organized body are stations, but the surface of the earth or soil is the chief. The localities may be considered workshops, differing in merit, without generally contributing materials towards the manufactures. Sustenance manufactured in the sea, and on the surface of the earth, equally sustains human life, and, in both cases, contains the same elements.

"Soil is not often regarded simply as a workshop, although no other view of it accords with the operations of nature and of man. It does not in any case appear to contribute materially to the formation of plants, and is only useful to them by affording support to their roots, and holding their sustenance; being a receptacle of air, water, decomposing organized bodies, and mineral substances. Soil may be rendered fertile or unfertile by imparting or withdrawing whatever promotes vegetation.

"In the preparation of human sustenance, then, soil is a workshop; air, moisture, light, heat, and decomposing organized bodies, raw materials; plants and animals, machinery; certain minerals and labors, oil for the machinery. In manufacturing produce, nature supplies air, light, heat, and moisture; man furnishes organized bodies, machinery and oil, which may generally all be obtained by capital. The parts performed by nature and man vary according to the fabric produced. In the case of pasturage, nature contributes the greatest share; in cultivation, the capital, skill, and industry of man are conspicuous. The neglected farm, incapable of producing turnips with a visible bulb, yields a full crop with a judicious application of labor and manure. The united exertions of nature and man insure success. She accomplishes much when unaided by man, but he cannot obtain anything without the assistance of nature. When she withholds heat or moisture, the manufacture is suspended, and she possesses the power of arresting or altogether destroying the machinery. Farmers combine nature's agency under the term climate; and they are familiar with the general effects of heat, frost, drought, and moisture. If given quantities of manure and labor were bestowed on equal por-

tions of soil, similar in quality, situated in Scotland, on a level with the ocean, and the top of a mountain, the difference of produce would be the effect of climate.

"Man has been doomed to earn his bread by the sweat of his brow. Experience confirms that the industry of an individual, closely applied to the cultivation of the soil in the temperate climes of the world, is more than adequate to supply sustenance to himself. It is a beautiful feature in farming, that agricultural improvements furnish additional food, increase almost every comfort, and ameliorate climate. The goodness of God to man is thus manifested, in providing him with the means of subsistence, and a reward according to his industry."

(From the Gardener's Magazine.)

Art. VI.—*On a Method of making elastic Walks for Gardens.*

Many things have been invented to render the body of man easy and comfortable; and, of these, the improvements which derive their advantages from elasticity appear to be preferred: the Indian-rubber shoes, and the water-proof elastic hats, I think, are proofs of this. The object of this paper is to carry the employment of elasticity a little farther, and to introduce it into gardening, if it is not already in use. Among the various methods of making walks pointed out in your *Encyclopædia of Gardening*, I can find none that accord exactly with those that I would recommend in this paper: namely, *elastic walks*. Their object is to add pleasure to the flower-garden; for in many gardens the walks are of such a nature, that one would almost think they were intended, to make the persons walking on them do penance in the temple of Flora, instead of affording ease and pleasure while contemplating the cultivaetd beauties of the vegetable kingdom; but, I believe, if the plan be adopted which I shall presently recommend, the fairest flowers of creation will linger with delight among the ambrosial sweets of the flower garden, and walk with as much softness and comfort as if on a Brussels carpet.

The method I would recommend to make elastic walks is this:—Remove the earth one foot deep; and, if found necessary to have a draiu, make it in the centre or side of the walk. After the drain is finished, fill the bottom of the walk with small stones to the depth of three inches or four inches; then fill up the remaining eight inches

with flow-peat, or decomposed moss (Sphágnum). This kind of peat is light and spongy, it resists putrefaction, and remains longer unimpaired in its form, than any other kind of peat. After it is put into the cradle of the walk, it must be levelled with the spade, and trodden upon with the feet, so that no inequalities may appear on the surface: afterwards the roller should be brought over it. After this treatment, it will have become more compact, and will have sunk a little: this will allow room for two inches or three inches of fine engine ashes to be laid above it. The ashes that have undergone two burnings are the best for color, having a close resemblance to gravel. After distributing the ashes equally over the surface of the peat with a rake, they must be rolled over and over, until they form a kind of cake above the peat, and then the walk is finished. It may be thought that walks of this nature will be damp, but I have always found them as dry as those that are made with stones and gravel; and they are strong enough for all the ordinary wheeling that is required in the flower-garden. I have no doubt that the valetudinarian would derive great comfort from sbch walks; and if they tend to make the flower-garden a greater source of pleasure, I shall have gained my object.

Art. VII.—*Massachusetts Horticultural Society.*

EXHIBITION OF FLOWERS.

Saturday, June 18.

From S. Sweetser, a bouquet of flowers containing Lophospermum, Calampelis, Echium, Asclepias, Fuchsias, &c. with numerous kinds of elegant new geraniums, among which, were Regulator, Yeatmanianum, Queen of Scots, Speciosissima and others.

From S. Walker, superb Seedling Violas, named Othello and Village Maid, were the finest we have ever seen, and deserve to be in every good collection; Bow's Claudius, and other pinks; also Astrantia, Lychnis, Fraxinella (White), Statices, White Rockets, Irises, &c.

From the Messrs Winship, Boursalt Roses, Harrison's yellow and new Florida Rose (similar to, or synonymous with R. Calypso of the French catalogues.)

From Hovey & Co., Oriental Poppies, Pentstemons, Phloxes, Veronicas, Calceolarias, Ranunculuses, Geraniums, Pæonia siberica, Sophora, Violas, &c.

From T. Lee, Esq. Lupinus Polyphyllus, Eschscholtzia, Rose Irene, Pentstemons and Tagetes lucida.

A meeting of the Horticultural Committee was holden at the Society's room this day and Mr S. Walker chosen Chairman.

SATURDAY, JUNE 25.

From S. Walker, Bow's Claudius, and Robinson's Navarino Pinks, both elegant; Double White Rockets, Pæonia Whittlejii, Roses, Phloxes, Irises, Glaucium, Chinese larkspur, Spiræas, &c.; Othello, Village Maid, Maculatum, and other fine Violas.

From Hovey & Co., Pæonia Whittlejii, Campanula aggregata, Phloxes, Geraniums, Pentstemons, Gaillardia, &c. &c.; also, Rivers' George the Fourth Rose, the new crimson Boursalt, and Spiræa bella.

ART. VIII.—*Gardener's Work for July.*

CLEAN and prepare ground on which you have raised, and from which you have gathered your earliest crops of peas, spinage, cabbages, &c. &c., and prepare such other vacant spots as may be cultivated for growing vegetables for your table in autumn and winter. Continue to sow crops of small salading every eight or ten days, but it will be best to sow them on shady borders, or else the young plants should be occasionally shaded by mats from the mid-day sun; and, if the season be at all dry, they should be frequently watered, both before and after their appearance above ground. You may now plant celery in trenches, that is, if the plants are about from six to twelve inches high. About the middle of July, and from that time to the end of the first week in August, you may sow turnips. It may be well in sowing turnip seed, to use some cheap and effectual preventive of the fly. "It appears from a trial of Knight, at the suggestion of Sir Humphrey Davy, that lime, slaked with urine, and mixed with a treble quantity of soot, if sprinkled on the seed at the time of sowing, will protect the seeds and germs from the ravages of this pernicious insect; but this antidote cannot be conveniently applied unless the sowing be in drills. A still simpler remedy has been recommended by Mear, an English gardener, viz: Steep the turnip seed in sulphur water, putting an ounce of sulphur to a pint of water, which will be sufficient for soaking about three pounds of seed." Thin and trans-

plant such lettuces as were sown last month, and sow more lettuce seed in the beginning, middle, and last week of this month, in order to have a constant supply for the table. Sow likewise radishes, and, the last week in this month a good crop of spinach may be sown for autumn use; it will not then be so liable to run to seed as in the preceding months. It is a good practice to sow early sorts of cabbages in this month, for a supply of young greens in autumn. Collect all kinds of seeds as they come to maturity, cutting off or pulling up the stems with the seeds attached as they ripen. Spread them in some dry airy place under cover, turning them now and then, that the seeds may dry, and harden gradually, and be careful not to lay them so thick as to hazard their heating and fermenting. When they are sufficiently dry, beat out and clean the seeds and deposit them in bags and boxes till wanted. Give water to such plants as require it, but let this always be done in the evening that it may be of use to the vegetables before the sun shall come to evaporate it.

You may now inoculate or bud your fruit trees, and, where it can be done without inconvenience, it may be well to let swine run in orchards to eat fallen and decayed fruits, and thus destroy the insects which such fruit contains. If, however, this cannot well be done, or you have not swine in sufficient numbers to devour all your fallen fruit, gather and carry it from the ground before the worms included in it, make their way into the earth, and thus perpetuate the plague of their visitations. The best management is to gather wind fallen fruit, as soon as possible after its lapse; boil it, together with a little Indian meal or some similar farinaceous substance, and feed it to swine after having been cooked and thus made the most of.

Art. IX.—*New and Valuable Fruits.*

Mr Kenrick's communication, announcing "*Additional Donations of New and Valuable Varieties of Fruits received from Dr Van Mons,*" together with the letters of the Doctor, present our readers with articles, which cannot fail to be highly appreciated. Had Professor Van Mons made the United States a present of a province, or a tract of country like that of Texas, or one of Bonaparte's kingdoms, he would have conferred a less favor on mankind, and given less cause for thankfulness to those who were the immedi-

ate recipients of the donation, than he has by the gift of his new sorts of fruits.

The Romans transplanted into Italy the fig from Syria, the citron from Media, the peach from Persia, the pomegranate from Africa, the apricot from Epirus, apples, pears, and plums from Armenia, cherries from Pontus, &c. &c., and those patriots who were instrumental in introducing those blessings, were thought worthy of the highest honors which their grateful countrymen could bestow. And surely such philanthropists as Dr Van Mons, and also Messrs Dearborn, Kenrick, Manning, Winships and others, who have been instrumental in effecting the benevolent purposes of the Professor, deserve to be held in honorable remembrance, and to receive at least the acknowledgements of gratitude from countless thousands who have been or may be benefitted by their benevolent exertions.—[Conductor.

Art. X.—*Catalpa Salicifolia.*

[Extract of a letter from Thomas S. Pleasants, of Beaverdam, Virginia, dated June 8, 1836, to the Editor of the Horticultural Register.]

"Some time ago, I was requested by my friend N. Hebromont, of Columbia, S. C., to send you a few seeds of the *Catalpa Salicifolia*, a splendid flowering tree, or rather shrub, brought to this country from Mexico by J. R. Poinsett, our late minister to that country. Various engagements have put it out of my mind; and though it is now late, yet as the seeds vegetate very readily, I have no doubt the plants will do well. It will be necessary in your climate to give it the protection of a conservatory during winter — in fact it is necessary here; but it well deserves all the attention which will be proper to keep it in a flourishing condition."

We are under great obligations to Mr Pleasants for his donation of the seeds above mentioned, and have distributed them in small parcels among our horticultural friends, who will pay every attention to their propagation.—[Conductor.